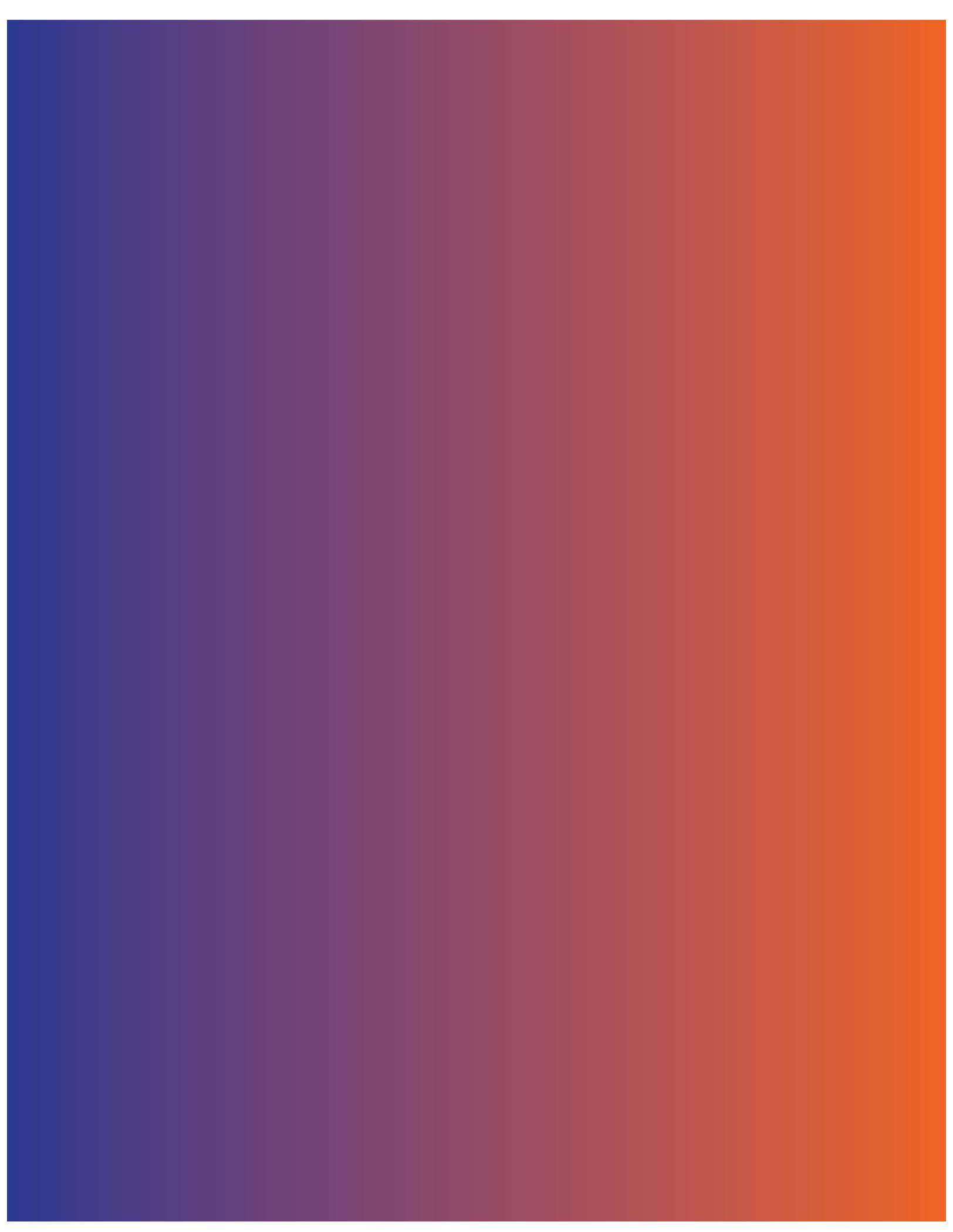




Oklahoma Trauma Strategic Plan



2013 Strategic Plan

Executive Summary

The Oklahoma State Department of Health (OSDH) has been entrusted to develop, implement and maintain a comprehensive trauma system with the goal of getting the right patient to the right place, receiving the right treatment in the right amount of time. OSDH maintains a partnership with experts from across the spectrum of trauma care, and it is from this collaboration the following plan was developed in order to chart the best course for Oklahomans.

The reality for Oklahomans is there are limited resources, especially for the most severely and time sensitive injured patients. The ultimate goal is to facilitate development of a regional and statewide trauma system. With that in mind, this strategic plan is being developed in conjunction with the Emergency Medical Services (EMS) strategic plan.

The purpose of this document is to provide a roadmap for addressing the weaknesses within Oklahoma's trauma system with an ultimate goal of creating a statewide and regionalized public health safety net to recognize time-sensitive injured patients, and to deliver injured patients to the appropriate level of care in a timely fashion.

By consensus from the members of the Oklahoma Trauma System Improvement and Development Advisory Council (OTSIDAC), the most significant system weaknesses are as follows:

- Time and distance to a definitive level of care can be long
- No standard time benchmark for transfer of high-acuity and time-sensitive injured patients
- No clear distinction (standard definition) of what constitutes a "Regional Level III"
- Air services compete with one another and hold calls
- Lack of well-coordinated, regionalized systems of care
- Lack of regional medical oversight

The strategic plan will provide background regarding the current trauma system, descriptions of our current system resources broken down by major categories with the strengths and weaknesses by category. The last working section of the strategic plan will include goals and objectives for addressing these weaknesses over a one (1) to five (5) year span.

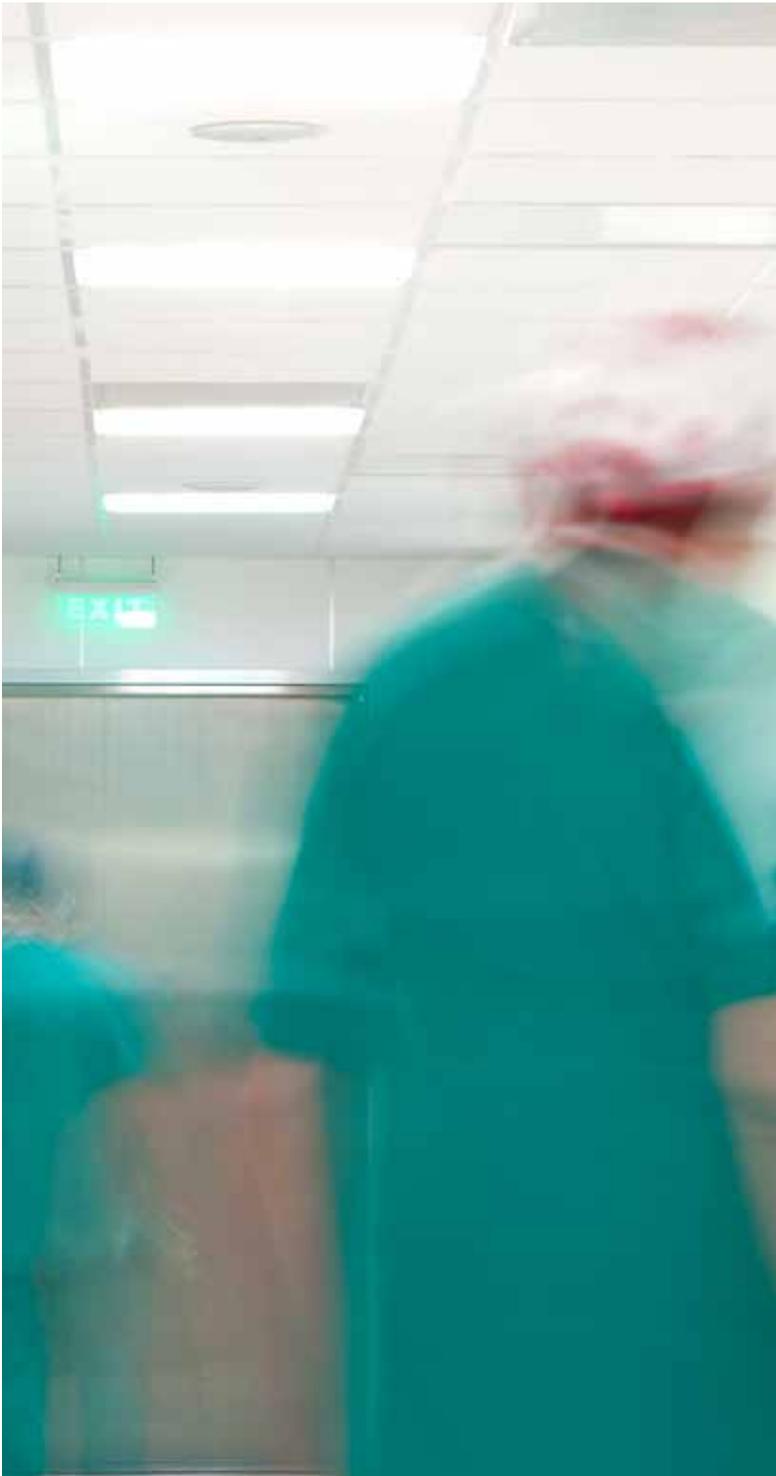




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1. Background

Senate Bill (SB) 1554, also known as the Oklahoma Trauma System Improvement and Development Act, was passed during the 2004 legislative session. The goal of SB 1554 was to facilitate the development of a state-wide trauma system. Several tools and resources have been developed over the past 9 years and put into operation to achieve the vision put forth in SB 1554. Currently, these include advisory committees such as Oklahoma Trauma System Improvement and Development Advisory Council (OTSIDAC), Medical Audit Committee (MAC), and eight Regional Trauma Advisory Boards (RTABs). All hospitals are categorized and classified into levels according to their trauma capabilities. Patients are transported and transferred by severity of injury and definitive care needs through the T-3 guidelines utilizing regional plans. The Trauma Referral Center (TReC) and statewide use of EMResource help ensure interfacility transfers occur in a timely fashion. A Trauma Care Assistance Revolving Fund, also known as the Trauma Fund, was created, distributing over twenty million dollars per year for unreimbursed care. A statewide Trauma Registry and Oklahoma EMS Information System (OKEMSIS) are in place for data collection driving quality improvement activities. In 2011 there were six scientific articles, utilizing state data, published in peer reviewed journals. Oklahoma has much to be proud of and has set a standard for other states with similar rural populations.

The next step will be to develop a strategic plan for the future focusing on “where we are now” and “where we want to be” in one to five years. Only by including the appropriate responsible parties in this effort and developing reasonable timelines can Oklahoma’s Trauma System achieve the degree of success that SB 1554 envisioned. Essential resources are in place and the development of a strategic plan should help ensure future success

Oklahoma would be remiss if this effort did not recognize the need for Regionalization. This will optimize available medical care resources. Regionalization will also pave the way to include other time-sensitive conditions such as stroke and ST segment elevated myocardial infarction (STEMI). These additional systems for expedient care should be led by the appropriate medical specialty leaders (e.g. Stroke system development by neurologists, emergency physicians, EMS specialists, etc).

Another critical element to achieve success is EMS division of the Oklahoma State Department of Health (OSDH) which was created by OS 63 1-2501 et seq., titled the Emergency Response Systems Development Act. The Act requires OSDH to develop Rules for

regulating emergency response systems in the state. The Act also charges the Commissioner of Health, through the EMS division, with oversight for many aspects of EMS, including licensure and education as well as a comprehensive plan for its further successful development.

EMS Regionalization must also be a part of this strategic plan. Oklahoma’s State EMS Plan must promote and ensure that all time-sensitive patients are stabilized, transported and transferred efficiently and rapidly. This means including in the plan ground EMS, critical care transport (CCT), specialized transport (SCT), and aero-medical transportation (rotor or fixed wing). The strategic plan needs to focus on patient acuity, transport time and distance to facilities capable of providing definitive care. Many local EMS services are struggling, especially in the areas of staffing and financial support. Further regional development will likely prove critical to sustain this essential public health safety net in Oklahoma.

2. Stakeholders

A. Hospitals

Currently, Oklahoma has one (1) American College of Surgeons (ACS) verified Level I trauma center and one (1) ACS-verified Level II trauma center. There is also one state-verified Level II trauma center. Oklahoma has 26 Level III classified hospitals and 80 Level IV facilities classified by OSDH, including those designated as Critical Access hospitals.

B. Ground EMS

164 Ground EMS agencies cover the 69,898 square miles in Oklahoma. The Ground EMS agencies provide a variety of levels of care ranging from Advanced Life Support (ALS) to Intermediate, and Basic levels of care. The agencies range from being paid services, fire based EMS services, volunteer services, and those with a mixture of paid and volunteer personnel.

C. Air EMS

25 primarily rotor wing aircraft, respond in the state. Currently, three corporations maintain aircraft around the state. All air ambulances operate as ALS units with paramedic/nurse crews.

D. Citizens/Patients

According to the last census estimate in 2012, there are approximately 3.8 million people living in the great state of Oklahoma. Additionally, thousands of people

In comparison, Regional CQI committees focus on system or process issues. These include issues with destination choice, triage, deviation from regional plan, and/or improper use of resources. Members of the Regional CQI committees are approved by their respective RTABs. Members include EMS personnel from air and ground transport, hospital personnel, as well as physicians from the region. Both CQI and MAC serve as vital feedback mechanisms regarding the status and performance of our trauma system. travel through our state via the roads and highways on a daily basis. For those who get injured, as well as their families, it is an important goal to strive that they experience a flawless healthcare system filled with caring and qualified providers. Thus, strategic plans like this should always be patient-centric.

E. Medical Personnel

Physicians are an integral part of the trauma system. They are the “decision makers” present throughout the entire continuum of care. Physicians are present in the prehospital setting serving as Medical Directors for emergency medical response agencies, ground emergency medical services, and air emergency medical services. Their presence becomes more visible in the hospital setting, where they provide their services and expertise in emergency departments, operating rooms, hospital units, and rehabilitation facilities.

Physician Assistants and Nurse Practitioners, sometimes known as mid-level providers or physician extenders, practice medicine in most emergency rooms throughout the state in various capacities in the trauma system. Some serve in specialty fields decompressing the workload on the physicians, while others provide medical care to a number of underserved communities in the rural parts of our state.

Nurses are present throughout the continuum of care for trauma patients. Their care in the trauma system ranges from providing expert patient care in the prehospital setting aboard air EMS units, to serving a myriad of roles in the hospital setting emergency departments, operating rooms, critical care units, step-down units, medical/surgical units, to the rehabilitation process.

Medics and First Responders are often the first to make contact with the trauma patient in the field. They provide patient care ranging from the Emergency Medical Responder, Emergency Medical Technician, Intermediate/Advanced EMT, to Paramedic. While primarily associated with ground EMS, these professionals are also serving in fire

departments, law enforcement agencies, emergency departments, and as flight paramedics.

3. Advisory Councils/ Committees

A. OTSIDAC

OTSIDAC is the state’s trauma advisory council. Its statutory makeup is listed in Senate Bill 1554. OTSIDAC’s quarterly meetings have been the impetus behind this strategic plan, and its input has been critical to establishing the content of the plan.

B. RTABs

The Regional Trauma Advisory Board (RTAB) statutory makeup is listed in Senate Bill 1554. The RTABs represent all licensed ambulance services and hospitals within a designated trauma region. Currently Oklahoma has eight trauma regions. Those organizations are required to attend quarterly meetings in their region. The RTABs are tasked with developing, implementing and maintaining a well functioning system within their regions.

C. MAC/CQI

SB 1554 created the Trauma system and the Regional CQI committees; which are sub-committees of the Regional Trauma Advisory Boards. There are 5 Regional CQI committees compared to the 8 RTAB regions. Two of the CQI committees are comprised of members from other regions to form combined committees. SB 1554 also created the Medical Audit Committee. Even though all of these committees (MAC and Regional CQIs) are involved in Quality Improvement, each committee focuses on a different aspect of the Trauma System.

Cases are submitted for review by first responders, EMS personnel, hospital staff or concerned citizens. Cases are also pulled from information entered into the Trauma Registry. Cases pulled for review are determined by certain QI indicators including patients in the initial hospital for greater than 120 minutes before being transferred to definitive care or patients transferred by air to definitive care and discharged less than 24 hours later.

MAC is a group of 11 physicians from different regions of Oklahoma as well as from different disciplines. These disciplines include Emergency Physicians, Trauma Surgeons, Neurosurgeons, Orthopedic Surgeons, Oral/Maxillofacial Surgeons and Pediatric Intensive Care. MAC primarily focuses on clinical practice issues and

non-therapeutic diagnostic testing which can delay transport to definitive care. They also review cases where a facility either refused a patient or delayed accepting a patient.

In comparison, Regional CQI committees focus on system or process issues. These include issues with destination choice, triage, deviation from regional plan, and/or improper use of resources. Members of the Regional CQI committees are approved by their respective RTABs. Members include EMS personnel from air and ground transport, hospital personnel, as well as physicians from the region. Both CQI and MAC serve as vital feedback mechanisms regarding the status and performance of our trauma system.

4. System Tools

A. Trauma Triage, Transport and Transfer (T-3) Guidelines

The T-3 Guidelines, also known as the “T-3 Algorithm”, is the set of trauma triage guidelines that provide the definitions of priority 1, priority 2, and priority 3 trauma patients within Oklahoma. Since some traumatic injuries are time sensitive, the T-3 algorithm provides clear definitions and guidelines for both prehospital and hospitals on the how to determine the priority of the patient, as well as guidance on destination selection and mode of transport. The T-3 was developed using guidelines from the American College of Surgeons (ACS) Committee on Trauma and Centers for Disease Control (CDC). The T-3 serves as the source document for regional plans and patient priority determines the destination for definitive care of the trauma patient.

B. EMResource

EMResource is a web based information and resource management tool that optimizes real time communication to enhance response to daily medical emergencies, as well as preparedness activities, mass casualty events, and public health incidents. Statewide displayed fields include statuses the following:

- Hospital and Emergency Department Capabilities
- Computerized Tomography (CT) Imaging
- General surgery
- Orthopedic surgery
- Neurological surgery
- Oral maxillofacial (OMF) Surgery
- Hand Surgery
- Cardiology

- Obstetrics and Neonatal Resources
- Medical Emergency Response Centers (MERC)
- Regional Emergency Medical Service System (REMSS) Assets
- Air and ground ambulances
- Oklahoma State Health Department (OSDH) Situation Room

C. TReC

Trauma Referral Center (TReC) was established by statute OS §63-1-2530.8. – Rule: OAC 310:641-3-130. TReC is an on-call system that assists ambulances and hospitals direct unassigned trauma patients to the appropriate hospital. TReC eliminates the need to call from hospital to hospital trying to get an acceptance for the trauma patient, preserving the highest-level resources for the most severely injured patients. TReC also facilitates the pre-hospital transfer of many patients from the scene to the appropriate destination selection for definitive care.

D. OKEMSIS

Since 2002, a statute has been in place requiring all EMS agencies to submit comprehensive data for all ambulance responses to the Oklahoma Emergency Medical Service Information System. (OKEMSIS) This database is compliant to with the National EMS Information System, thus allowing participation in the development of a high quality National EMS data base. Analysis and use of this data will undoubtedly lead to improved patient outcomes

E. Trauma Registry

Oklahoma Statute requires the State Health Department to develop and monitor a data collection system for trauma. The Trauma Registry was created to meet that requirement. The Trauma Registry is a database that contains detailed information about injuries that meet a specified level of severity, as submitted by hospitals. The Trauma Registry gives the State Department of Health the ability to gather, analyze, and utilize that data for successful implementation and improvement of the trauma system. From this information the following questions can be examined:

- Trends in type of injury
- Demographic profile of injured individuals
- Geographic distribution of traumatic injuries
- Economic impact of traumatic injury
- Outcome of traumatic injuries

F. Trauma Fund

The Trauma Care Assistance Revolving Fund (Trauma Fund) provides for reimbursement of uncompensated costs associated with trauma care provided by recognized trauma facilities and emergency medical providers. In 2004, House Bill 1554 added physicians to the list of providers eligible for reimbursement from the Trauma Fund. Administrative rules to implement this statutory change became effective on July 11, 2005.

The Trauma Fund is a continuing fund that is available from year-to-year to support the public health safety net required to provide appropriate emergency medical care to the severely injured patient. Current sources of revenue for the Trauma Fund include renewal and reinstatement fees for driver licenses; fines for second/ subsequent convictions for driving without a license, convictions for driving under the influence, driving without a license, failure to maintain mandatory motor vehicle insurance, violating the open container law, speeding, drug-related convictions and the Tobacco Tax.

Based upon budget projections, collections from all Trauma Fund revenue sources are anticipated to reach between \$14 million - \$20 million annually. Ninety percent of the funds collected will be distributed among the eligible participants during each future distribution period, with thirty percent of each distribution earmarked specifically for physicians.

Eligible EMS, hospital and physician disbursement entities may be qualified for reimbursement from the Trauma Fund for cases meeting required major trauma clinical criteria, and must be uncompensated after reasonable collection efforts are exhausted.

Major trauma cases meeting the clinical case definition are identified through required data reporting by Hospital Trauma Registrars to the State Trauma Registry. Qualifying clinical case criteria includes those trauma cases reported to the Registry with ICD-9 codes of 800.0 to 959.9 and a defined severity of injury. The fund is distributed on a pro-rata basis after costs are established and ineligible cases are subtracted.

G. On-Call Systems: OKC and Tulsa

The On-Call Rotation System in Oklahoma City was established to provide a back-up treatment system for high acuity trauma patients and was designed to decompress the Level I Trauma Center. When "on-call" each hospital will provide orthopedics, neurosurgery, general surgery, facial trauma, hand trauma and anesthesia or arrange coverage through hospital transfer agreements. The rotation provides coverage for Priority 2 patients with single system injury, Priority 1 single system neurologically injured patients and patients with probable subarachnoid hemorrhage will also be transported to the on call hospital.

Tulsa's call rotation differs from Oklahoma City's rotation in that the two Level II trauma centers in Tulsa provide coverage on alternating days for all Priority 1 trauma patients and one third of unassigned Priority 2 trauma patients. Four Level III hospitals (two per day) treat the other two thirds of unassigned Priority 2 trauma patients on their "on-call" days.

In both Oklahoma City and Tulsa, hospitals provide care for established patients, stable patients that have requested the facility, or patients arriving to their emergency department, regardless of being "on-call" if they have the capability to do so.

5. Strengths and Weaknesses

Hospital Classification

Strengths

- All hospitals are categorized
- The four levels seem to accurately define hospital capabilities
- Most patients can be safely cared for in the lower levels

Weaknesses

- Time and distance to a definitive level of care can be long
- Adherence to Regional Plans is not consistent
- No standard time benchmark for transfer of high-acuity patients and time-sensitive injured patients
- No clear distinction (standard definition) of what constitutes a "Regional Level III"
- Insufficient number of tertiary care facilities to support our population
- Insufficient sharing of digital imaging between agencies and facilities
- Inadequate number of physicians and other providers trained in emergency and trauma care principles.

EMS-Ground and Air

Strengths

- Adequate number of helicopters in state
- Most of state population adequately covered by ground
- Increase in number of EMRAs (Fire Departments and Law Enforcement agencies) to assist ground services
- Air providers are willing to work and train with ground agencies
- Improving relationships between OSDH staff and agencies through developmental consults and educational offerings
- Most agencies trying to adapt to agreed upon regional plans
- Enthusiasm of EMS professionals to advance standards of care and care capabilities

Weaknesses

- Air services compete with one another and hold calls
- Lack of coordination of ground/air resources causes delays to care and creates need for better defined roles by using total numbers from OKEMSIS and Trauma Registry (waiting on-scene vs. direct ground transport)
- Multiple agencies under duress secondary to financial and inadequate staffing
- Not well coordinated or regionalized
- Weak medical oversight
- Inadequate coordination of helicopter resources
- Over-utilization of air resources
- Inadequately trained medics in many rural areas
- Few formal training opportunities specific to EMS medical direction (few EMS fellowship slots in Oklahoma; no allopathic EMS fellowship slots in Oklahoma)
- Lack of continuing education specific to EMS medical directors (new, standardized curriculum being offered effective July/August 2012 through OSDH and OU Department of Emergency Medicine)
- Wide variation in the quality of EMS protocols between agencies (new standardized protocols will be offered in 2013 through collaborative efforts of OSDH and OU Department of Emergency Medicine)
- Inadequate implementation of regional plans
- No incentive to consider different model based on regionalization
- Lack of availability of ALS ground services
- While most of the population is covered by ground EMS, there are significant geographic gaps in coverage
- Insufficient use of ALS intercept

OTSIDAC

Strengths

- Agenda focusing on strategic planning
- Mix of professionals on committee

Weaknesses

- Lack of geographic diversity in membership
- Perceived disconnect between OTSIDAC and the RTABs
- Lack of coordination with OERSDAC: the divide between "EMS and Trauma"
- Too much focus on money and not enough on strategic planning

MAC

Strengths

- Stability and makeup of committee members
- High level of interest and engagement of members
- Members are compensated
- Case discussions protected by peer review
- Expertise and diverse professional backgrounds of the members

Weaknesses

- The same clinical issues occur repeatedly, however the ability to use the findings to leverage change has been limited
- Regional CQI committees need feedback from MAC
- Case reporting and disposition of cases can lag events of concern by months
- Inconsistent loop closure to referring facility
Need legal guidance to address this weakness

RTABs

Strengths

- Each RTAB has adopted regional plan
- Motivated participants
- CQI activities
- Better networking between representatives and more communication outside of the meetings
- Successful venue for dissemination of information and communication between stakeholders and state
- Has created a platform where meaningful regional strategic planning can occur

Weaknesses

- Not enough participation in some regions
- Inadequate participation by stakeholder decision-makers and leadership
- Possible need for realignment with specific regions to improve regional outcomes
- Perceived tensions between hospital and EMS personnel
- Information does not flow to agencies/facilities; the representative does not disseminate the information
- Inadequate physician involvement in RTABs and CQI, especially in the rural regions
- Plans are not consistently reviewed and necessary changes implemented
- Under-utilization of video conferencing

T3 Guidelines

Strengths

- T3 Guidelines adhere to most recent CDC recommendations
- Quick Reference Guide (QRG) makes the T3 Guidelines easy to use
- Education materials have been distributed statewide

Weaknesses

- Adherence to Regional Plans is not consistent
- EMS providers do not consistently prioritize the patient and encode priority to hospital
- Hospital and EMS providers fail to utilize T3 in decision making

TReC

Strengths

- Single location, easily accessible in 911 center with dedicated referral specialists
- Stability in staffing promotes competence and consistency among referral specialists
- Quick Reference Guide (QRG) is user friendly and has been distributed statewide
- Availability of audio recordings for use in QI/PI cases
- Regular case review sessions with OSDH and emergency physician consultant to gauge trends, compliance, and quality

Weaknesses

- Limited data analysis abilities (limitations of current software capabilities)
- Still not utilized by many providers

EMResource

Strengths

- Statewide real time inventory of resource availability
- Use is mandatory for hospitals
- Expanding in range of capabilities and applications
- A strong, relevant resource when kept current

Weaknesses

- Not kept current by hospitals
- Additional fields would be helpful
- EMS agencies may not consistently utilize the resource
- Hospitals may not consistently utilize the resource

Trauma Reimbursement Fund

Strengths

- Reimbursement fund in place with proven track record
- A significant portion of financial resources flow toward the most severely injured

Weaknesses

- Reimbursement based on billed charges rather than case rate
- Current formula too difficult to use for most physicians
- Current formula does not recognize readiness costs adequately
- Not enough funding focused on system improvement
- Longer-term funding solutions need to be found
- Lack of clear definitions for ground vs. air EMS reimbursement

Trauma Registry

Strengths

- Mandatory statewide participation
- Mandatory for trauma fund reimbursement
- Quality data obtained from registry support good research and decision making
- Level of participation and quality of submitted data has greatly improved over the past five years
- Data has been used repeatedly for planning at the local, regional and state levels

Weaknesses

- Insufficient personnel (One state trauma registrar and limited support staff)
- Data underutilized in system development and at smaller facilities

OKEMIS

Strengths

- Improved agency compliance
- Improved data collection

Weaknesses

- Inconsistent support from Vendor
- While agency compliance and data collection have improved, we still have data not well-utilized at the local, regional, and state levels

On Call Systems-OKC and Tulsa

Strengths

- Both communities aware of need to cooperate in their respective communities
- Both communities have deep resources of hospitals, physicians, and EMS services
- Both communities have adequate numbers of surgeons and surgical subspecialists
- Both communities have excellent emergency departments
- Specific hospitals have stepped up and increased their share of unassigned trauma patients

Weaknesses

- OKC - Lack of a full time Level II facility
- OKC - Priority 2 call rotation system is delicate at best
- Hand "situation" is problematic
- OKC - Patients do not always go to the closest, most appropriate facility;
- Discrepancy in the time it takes TReC to successfully place a patient in OKC [longer in OKC versus Tulsa]

6. Goals and Timelines

A. One Year

- Continue to focus on Oklahoma Trauma Education Program (OTEP) Principles and Quality Improvement through training with hospitals, EMS Agencies, EM RAs, and physician groups through joint, regionalized training which will address multiple weaknesses.
- In addition to required services, Level III hospitals require neurosurgery capabilities, at a minimum, to be considered “Regional Level IIIs”. TReC personnel, at the start of each shift, will contact the five hospitals that currently operate as Regional Level IIIs to verify their resources as indicated on EMResource.
- Through the Medical Audit Committee, work with the RTABs to establish a time benchmark for the transfer/transport of high acuity and time sensitive trauma patients by examining data from the trauma registry and cases referred to MAC and CQI.
- Work towards enabling legislation for additional revenue streams for the trauma fund and to include stroke, STEMI, and other time-sensitive medical conditions in the RTABs. Some suggestions from OTSIDAC for additional funding include the Turnpike Authority, additional license fees, casino proceeds, and a dram-shop tax on the sale of alcoholic beverages.
- Ensure the strategic trauma plan and strategic EMS plan work in conjunction with one another.
- Revise EMResource to reflect hospital classification levels and to include stroke and STEMI capabilities.
- Enable real-time tracking of air assets to include location and availability of aircraft through EMResource. Coordinate ground and air resources through real-time tracking and use of TReC and EMResource to locate nearest appropriate air resource.
- Launch 2013 EMS protocols.
- Align OTSIDAC and RTABs through the strategic plan. Evaluate the makeup of OTSIDAC and RTABs with focus on improving lines of communication.
- Research the use of technology to aid education and field-use efforts such as the addition of smart phone apps for OTEP and state protocols.
- Evaluate alternate payment methodology from Trauma Fund for hospitals and physicians.
- Reengage the members of the RTABS and clearly define purpose and mission of meetings.
- Secure additional resources for Trauma Registry.
- Evaluate and recommend case review selection for MAC.

B. Three Years

- See the passage of the enabling legislation for alternative funding and for the addition of other time-sensitive medical conditions.
- Tie system participation (OTEP, EMResource, TReC utilization, Trauma Registry and OKEMSIS compliance) to Trauma Fund and OERSSIRF eligibility.
- Revise the regional trauma plans and rename to RTABs to reflect the addition of the other time-sensitive medical conditions.
- Develop Smartphone apps for OTEP and state protocols.
- Evaluate and propose regionalization models for EMS resources to improve cost efficiency and care coordination.
- Evaluate the role and possibility for a permanent Level II Trauma Center in OKC.

C. Five Years

- See all time sensitive medical conditions and trauma appropriately triaged and transferred to appropriate facilities within a set time limit.
- Publish apps for OTEP and state protocols.

Appendices: Maps

Appendix A: Trauma Regions

Appendix B: Trauma Regions with counties

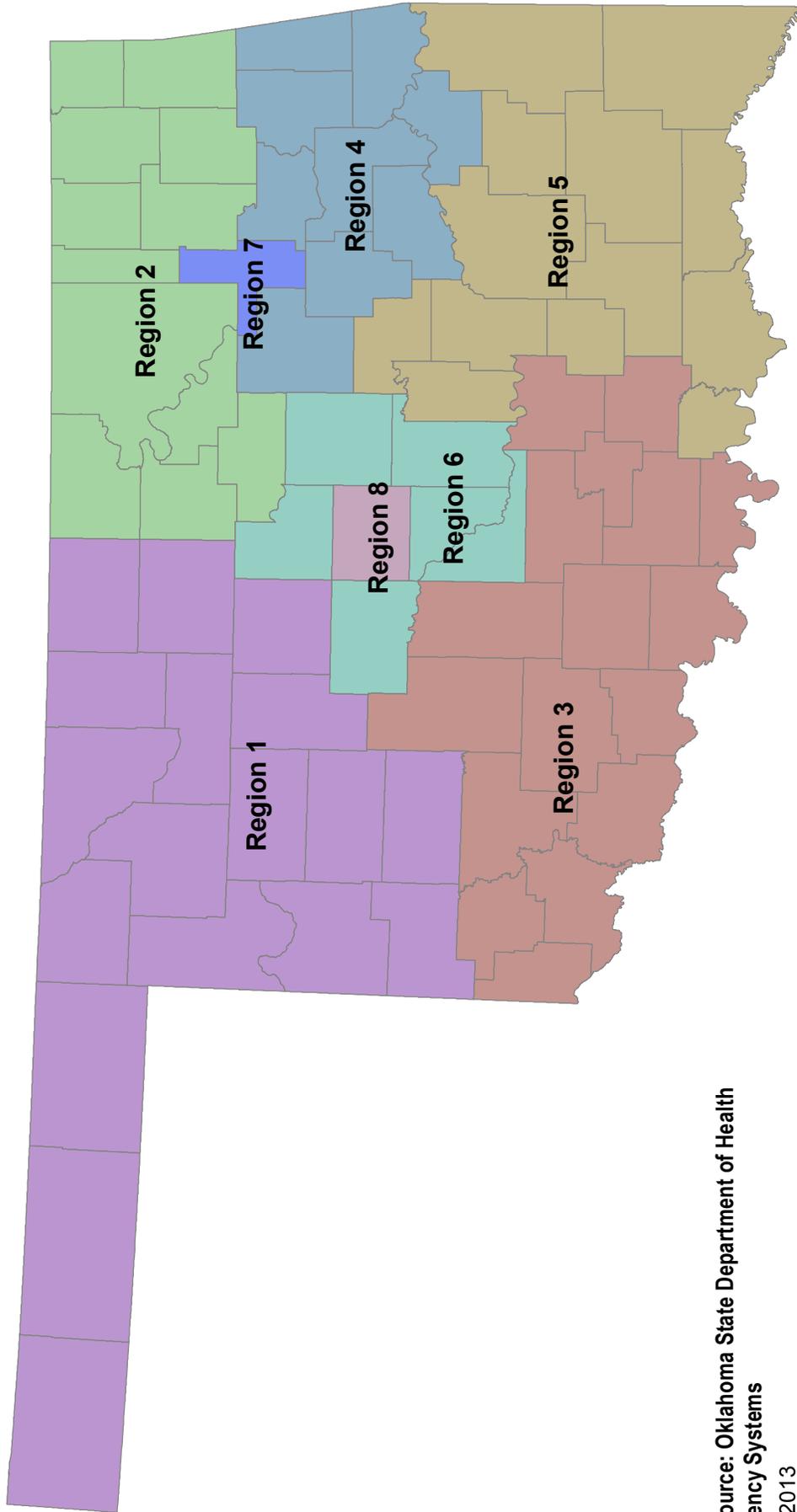
Appendix C: Trauma Regions with populations

Appendix D: Hospitals by Trauma Level

Appendix E: Ground and Air EMS Agencies

Appendix F: Ground and Air EMS Agencies with Air Service Coverage Areas

Oklahoma Trauma Regions 2013



Data Source: Oklahoma State Department of Health
Emergency Systems
07-11-2013

Projection: USGS Albers Equal Area Conic

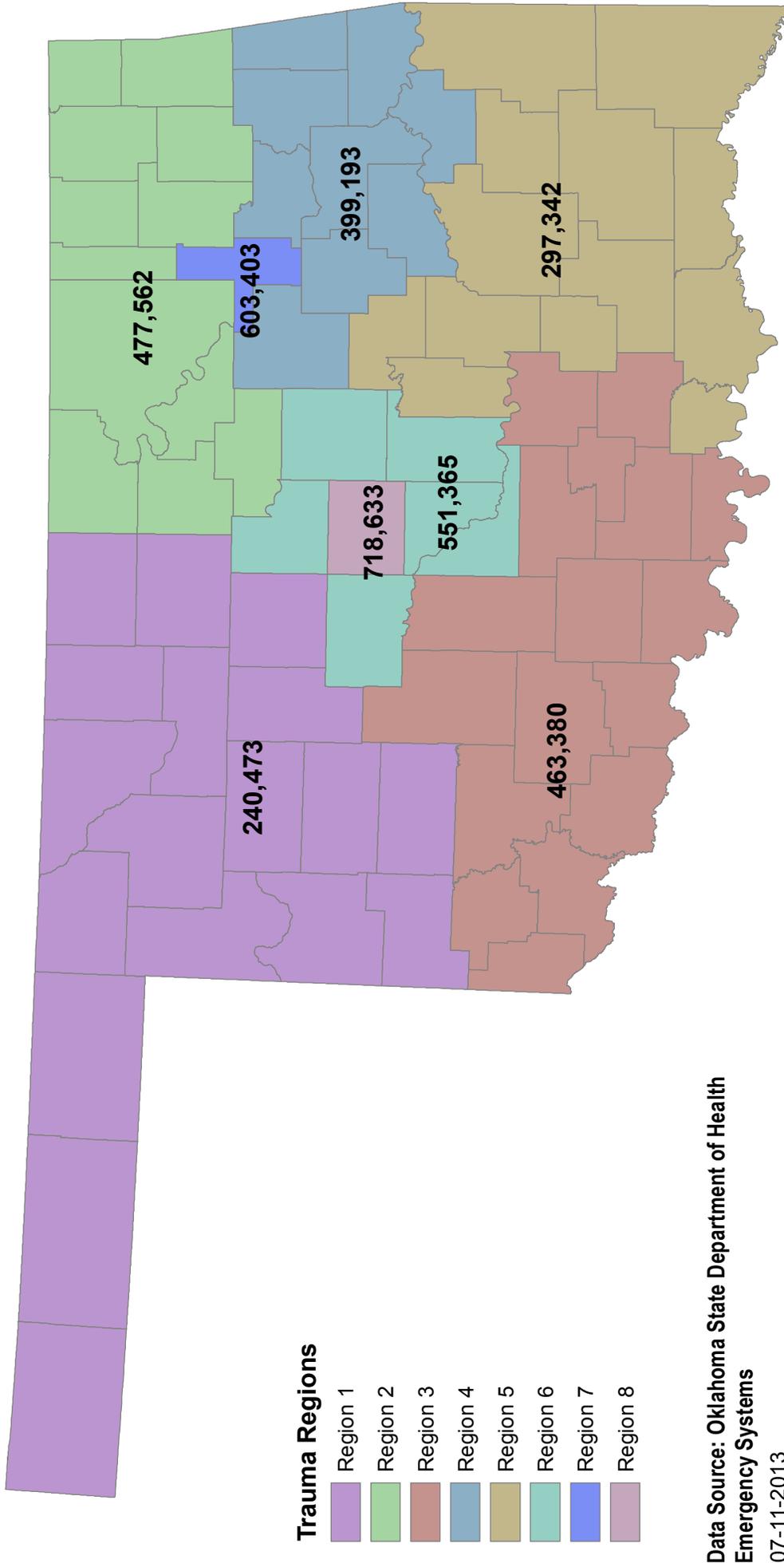


Disclaimer: This map is a compilation of records, information and data from various city, county and state offices and other sources, affecting the area shown, and is the best representation of the data available at the time. The map and data are to be used for reference purposes only. The user acknowledges and accepts all inherent limitations of the map, including the fact that the data are dynamic and in a constant state of maintenance.



Emergency Systems
Protective Health Services
Oklahoma State Department of Health

Oklahoma Trauma Region Populations 2013



Appendix C: Trauma Regions with populations

Data Source: Oklahoma State Department of Health
Emergency Systems

07-11-2013

Projection: USGS Albers Equal Area Conic

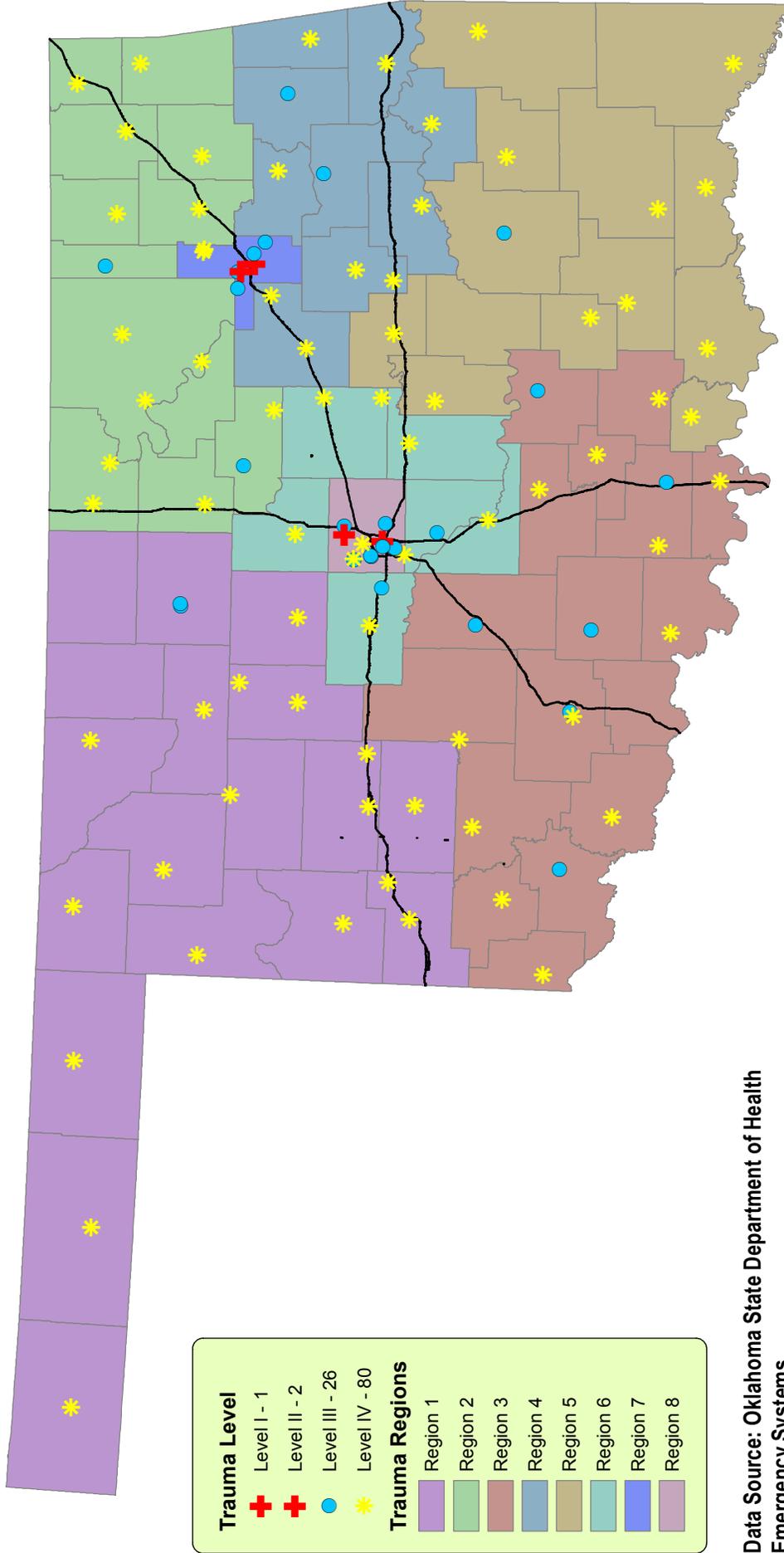


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Emergency Systems
Protective Health Services
Oklahoma State Department of Health

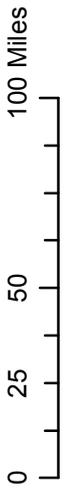
Trauma Regions and Hospitals by Trauma Level, Oklahoma 2013



Data Source: Oklahoma State Department of Health
Emergency Systems

07-11-2013

Projection: USGS Albers Equal Area Conic

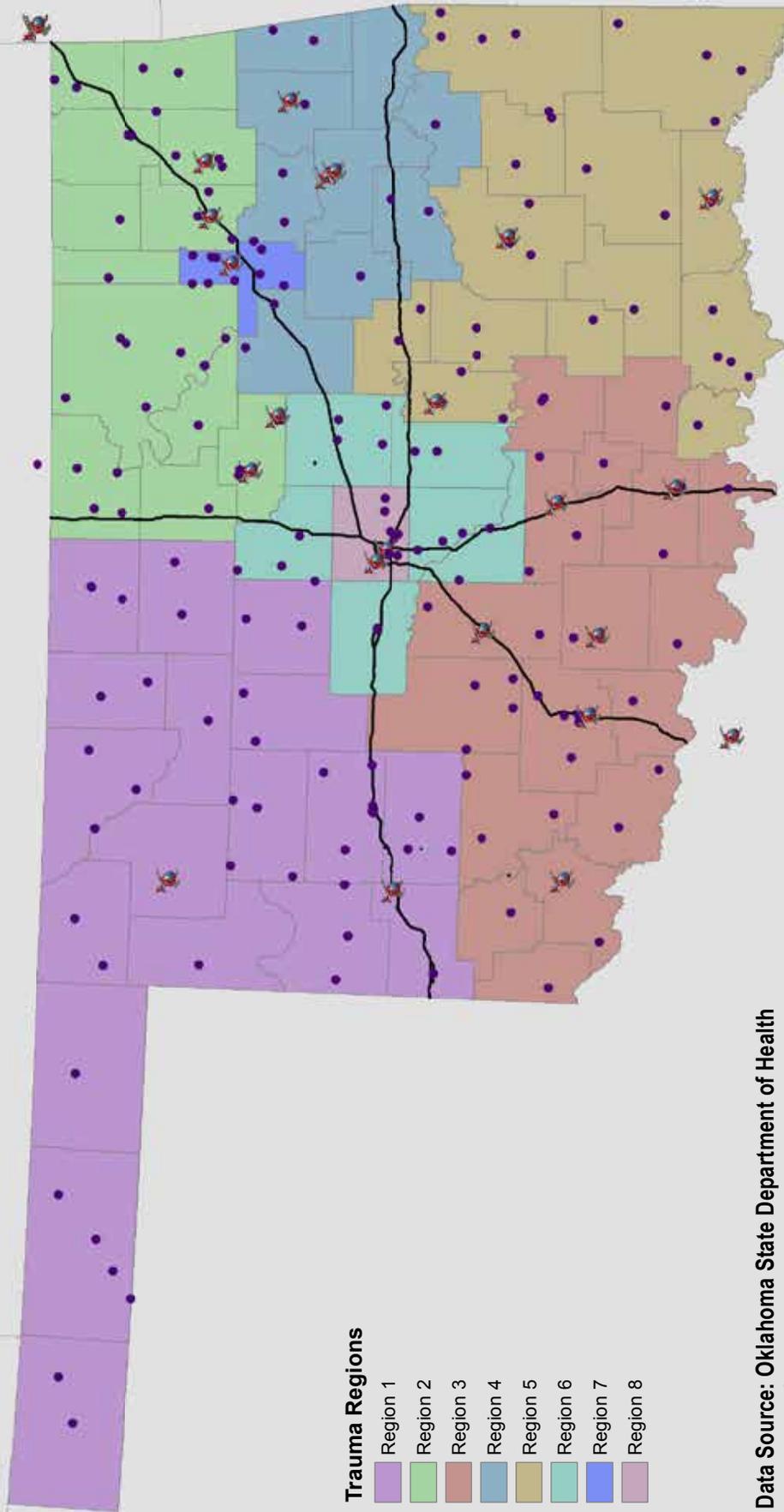


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Appendix D: Hospitals by Trauma Level

Oklahoma EMS Station Locations, 2013



Trauma Regions

- Region 1
- Region 2
- Region 3
- Region 4
- Region 5
- Region 6
- Region 7
- Region 8

Data Source: Oklahoma State Department of Health
Emergency Systems

07-11-2013

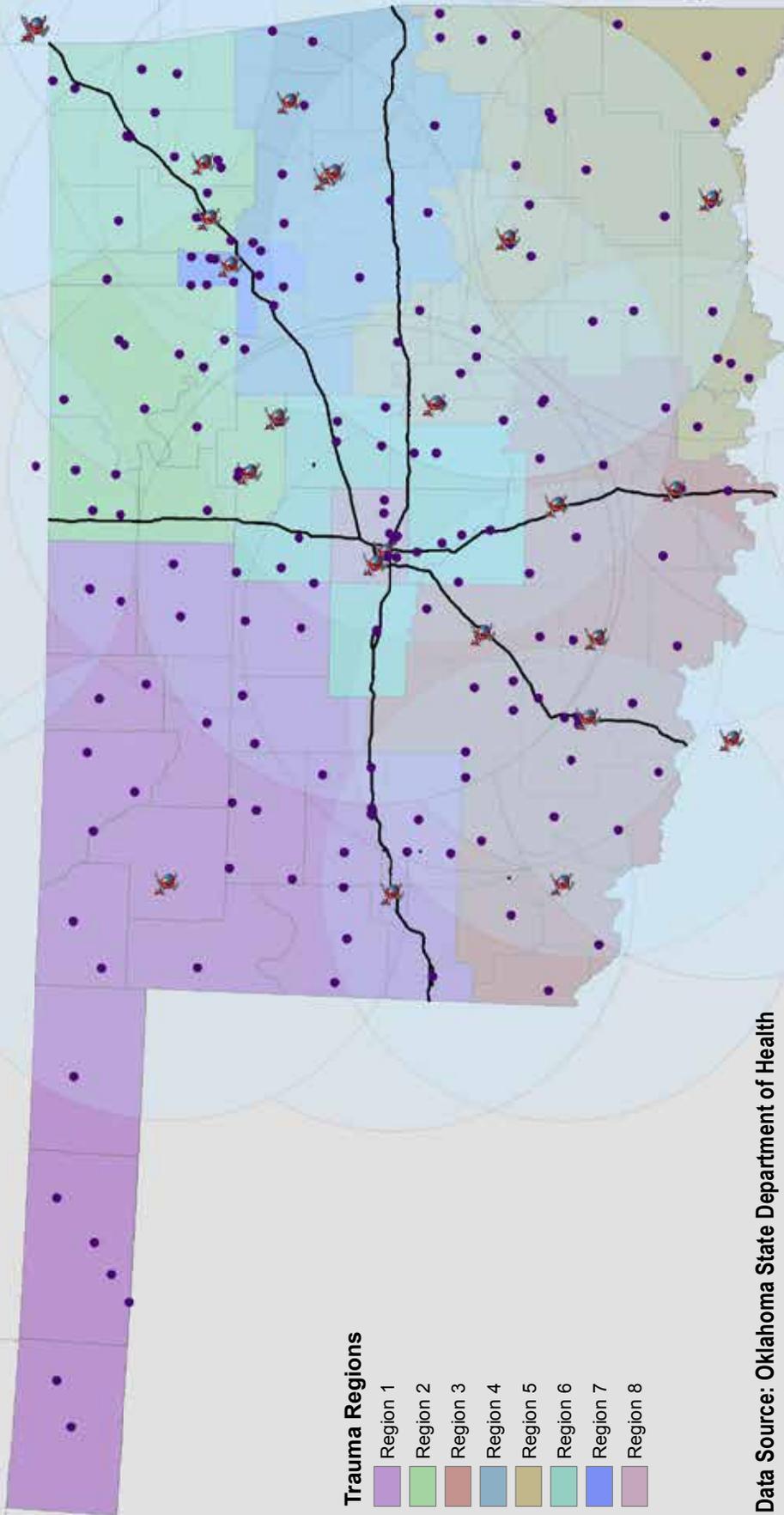
Projection: USGS Albers Equal Area Conic



0 20 40 80 Miles

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Oklahoma EMS Station Locations with 75 Mile Radius Around HEMS Bases 2013



- Trauma Regions**
- Region 1
 - Region 2
 - Region 3
 - Region 4
 - Region 5
 - Region 6
 - Region 7
 - Region 8

Data Source: Oklahoma State Department of Health
Emergency Systems
 07-11-2013
Projection: USGS Albers Equal Area Conic



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